VANYSEK, J.
(5458)

Diisopropylfluorofosfat - Nove miotikum Diisopropylfluorophosphate - a new miotic
Ceskoslovenska Ofthalmologie 1949, 5/1 (8-14)
In a normal eye, 0.05 % oily solution of DFP produced a prolonged maximal miosis lasting
up to a week. The intraocular pressure was not influenced in most cases. Disturbances
due to ciliary spasm and headache, especially in the bones of the orbit, were present and
could be temporarily abolished by 1% homatropine. In several cases miosis of the other,
untreated, eye was observed, due to resorption of DFP and its action on blood cholinesterase.
No systemic distrubances were observed. In a boy aged ten a paradoxical mydriasis soon
followed the initial miosis. This can be explained as a compensatory hyperfunction of the
parasympathetic system. In an atropinized eye, 0.1% solution of DFP abolished the effect
of 1% atropine. This makes DFP the most potent of the known miotics. Hyperaemia of the
iris occurred in one eye with recent contusion. Thus, DFP is unsuitable if inflammatory
changes of the iris are present. As regards glaucoma, DFP seems to be especially indi-
cated in glaucoma simplex; 0.05% proved to be a suitable solution, instillations once to
twice a week sufficing. A good effect was observed in six cases of chronic inflammatory
glaucoma with instillation twice a week. Experience in acute inflammatory glaucoma was
less favourable. A good effect was observed in secondary glaucoma accompanying intumescent
cataract and aphakia. No effect was observed in secondary glaucoma thrombosis of the
central vein of the retina, or in a case of lens subluxation where the pain became more
severe in spite of lowering of the intraocular pressure.

Klima - Prague (Sec. XII)

So: Excerpta Medica, Vol. II, No. 10, Sect. II, Oct. 1949

VANYSEK J.

VANYSEK J.

Dnesni indikace a vysledky transplantaci rohovky. /Present
indications and results of corneal grafts/ Lek. listy 5:9
1 May 50 p. 249-52.

1. Of the Eye Clinic of the Medical Faculty, Charles University,
    in Hradce Kralove, (Head — Prof. Jan Vanysek, M.D.).

VANYSEK, J.

Present indication and results of the corneal grafts. Lek.listy
5 no.8:228-230; contd. Ap '50.   (CLML 19:2)

1. Of the Eye Clinic of the Medical Faculty, Charles University,
in Hradce Kralova, (Head -- Prof. Jan Vanysek, M.D.).

VANYSEK, J.

Significance of climate therapy of ocular tuberculosis.
Cesk. ofth. 6 no.2:91-96 1950.   (CLML 20:1)

1. Of the Eye Clinic in Hradec Kralove (Head--Prof. Jan Vanysek,
M. D.).

VANYSEK, J.

Present indications and results of corneal grafts. Lek.listy 5 no.9:
249-252 1 My '50.   (CLML 19:2)

1. Of the Eye Clinic of the Medical Faculty, Charles University, in
Hrdace Kralove, (Head -- Prof. Jan Vanysek, M.D.).

REZEK, V.; VANYSEK, J.

Transplantation of the vitreous. Cesk.ofth. 6 no.5:257-265 1950.
(CIML 20:7)

1. Of the Eye Clinic of the Medical Faculty of Charles University
Branch in Hradec Kralove (Head--Prof. Jan Vanysek, M.D.).

VANYSEK, J.

Implantation of resins into the orbit. Cesk.ofth. 7 no.5:319-329
1951.   (CIML 21;1)

1. Of the Eye Clinic of Charles University, Branch in Hradec Kralove
(Head--Prof.Jan Vanysek,M.D.).

VANYSEK, J.

Contact lenses. Prakt. lek., Praha 31 no. 12:276-279 20 June 1951.
(CLML 22:3)

VANYSEK, J;VAVRA, R;ZELENY, V.

Method of electroretinography in man. Cesk. ofth. 8 no.1:1-8
Jan 1952.   (CLML 22:2)

1. Of the Institute of Experimental Pathology and of the Eye
Clinic of the Military Medical Academy in Hradec Kralove.

VAHYSEK, J., Prof. MUDr; PACAK, Miroslav, Ing.; AMBROZ, Ludvik, MUDr;
SERLE, Jan, MUDr

Attempted construction of an apparatus for extraction of intra-
ocular non-magnetic foreign bodies. Cesk. ofth. 10 no.3:194
Je '54.

1. Z ocni kliniky VLA.
        (EYE, foreign bodies,
          *extraction of non-magnetic objects, appar.)
        (FOREIGN BODIES,
          *eye, extraction of non-magnetic object, appar.)
        (OPHTHALMOLOGY, apparatus and instruments,
          *for extraction of non-magnetic for. body)

VANYSEK

2/2

Bratislava, Bratislavske Lekarske Listy, Vol XLII, No 4, 62
(continued)

6. "Radioiodine Tests From the Point of View of the Endocrinological In-
stitute in Trnava," M. FUTKA of the Endocrinological In-
tics in Trnava," M. FUTKA of the Endocrinological In-
stitute Endocrinologicky ustav), Slovak Academy of Sci-
ences (Sav No 5); Bratislava, J. PODOBA, MD, C. Sc. (Can-
didate of Sciences), director) pp 226-231.

7. "Penicillin Twenty Years After," M. BERNEGA of the Insti-
ture of Epidemiology and Microbiology (Ustav epidemiolo-
gia a mikrobiologie), Bratislava, Docent J. VRTIAK, MD,
director; and V. KRTINA of the Chair of Technical Micro-
biology and Biochemistry (Katedra technickej mikrobiolo-
gie a biochemie), Faculty of Chemistry (Chemicka fakulta),
Slovak Institute of Technology (Slovenska vysoka skola
technicka), Bratislava, P. NEMEC, corresponding Member of
SAV, director) pp 234-241.

8. "Reports on the Activities of the J.E. Purkyne Czechoslo-
vak Medical Society (Ceskoslovenska lekarska spolecnost
J.E. Purkyne); Docent Dr E. BARTA, C. Sc, P. BRXHA,
Graduate Physician (promovany lekar), and Dr E. KONZLA,"
pp 242-243.

9. "Fifth International Congress on Psychotherapy in Vienna,"
Dr V. ZIKMUND) pp 253-255.

10. "Prizes for Scientific Work Awarded by J.E. Purkyne Cze-
choslovak Medical Society," Prof. Dr Jiri HOLY and Prof.
Dr Jan VANYSEK, Secretary and Chairman of the Society)
pp 255-255.

(5)

VANýSEK, S.

EXCERPTA MEDICA   Sec.12 Vol.9/6 Ophthalmology Jun 55

653. VANÝSEK J. Eye Clin. VLA Hradec Králové ČSR. + Život a dílo Jiřího
Procházky. Jiří Procházka - His life and work ČSL.OFTHAL.
1954, 10/4 (263-270)
Biography of Jiří Procházka (1749-1820), professor of anatomy, physiology and
ophthalmology in Prague and Vienna, founder of modern knowledge on neural
reflexes and skilful ophthalmic surgeon, who performed more than 3,000 cataract
extractions.   Zahn - Prague

Vanysek, J.

EXCERPTA MEDICA   Sec.12 Vol.9/9 Ophthalmology Sept55

1411. VANÝSEK J. *O fysiologii a pathologii lidského elektroretinogramu. Physiology and pathology of the electroretinogram NAŠE VOJSKO, VYDAVATELSTVÍ ČS. BRANNE MOCI (Praha) 1954 (221 pages) Illus. 128

In six chapters the physiology and pathology of the ERG are discussed, illustrated by numerous electroretinographic records. The active electrode was applied in the form of a contact lens of artificial resin. The action potentials were recorded with a four-canal amplifier with photographic registration. As useful components for clinical consideration the time of latency, the amplitude and the time of duration of the B wave are considered. The clinical features of the ERG are summarized as follows: Arteriosclerosis and hypertension: no typical pictures. Ischaemia results in a subnormal ERG. Thrombosis of the central vein: ERG

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subnormal or absent, predominance of negative components. Retinal detachment
gives a subnormal ERG, with on the borders also a supernormal ERG. Retinitis
pigmentosa has no A and B wave, with negative predominance and C wave. In
glaucoma the character of the ERG is not in accordance with the amount of visual
loss. Amblyopia in hypermetropia has a subnormal slow ERG. Protanopia and
deuteranopia may be revealed with electroretinography. Hemeralopia may be
detected. The book is extensively illustrated by numerous recordings of ERGs.
The author is of the opinion that electroretinographic examination should consist
of several examinations. Examination of the photopic ERG, of the influence of
the time of exposure on the ERG, of the influence of spectral light, of photopic
and scotopic ERG, of the central time. As complementary investigations are
considered examination by intermittent accelerating flashes, influence of dark
adaptation on ERG and electroretinographic perimetry. Winkelman - Amsterdam

VANYSEK, Jan

Jiri Prochazka, on ophthalmologist. Lek. listy, Brno 9 no.15-16:
382-384 1 Aug. 54.

1. Z ocni kliniky VLA.
     (BIOGRAPHIES,
          Prochazka, Jiri)
     (OPHTHALMOLOGY, history,
          Czech., contribution of Jiri Prochazka)

EXCERPTA MEDICA Sec.12 Vol.10/7 Ophthalmology July56

997. VANYSEK J. Klin. O.cznej Czechoslowackiej, Wojskowej A. M. ^Jaskra w
obrazie elektropelinograficznym. The ERG in glaucoma KLIN.
OCZNA 1955, 25/4 (235-248) Graphs 8 Tables 1
No logical correlation was found between the ERG and the course of the disease.
The author supposes that the lack of correspondence between the ERG and the
pathological manifestations during the disease is caused by the affected interde-
pendence between stimulation and inhibition of neural action which takes place
in the retina presumably.   Szmyt - Łódź

1486. VANÝSEK J. Očnf Klin., Brno. *Trias R. Vanýska a primárnf glaukom.
    R. Vanýsek's triad and primary glaucoma VNITR. LÉK. 1956,
    2/2 (177-180) Tables 1
R. Vanýsek's triad (expiration retardation of pulse, Thomayer's orthostatic tachy-
cardia and Erbens' retardation of pulse during anteflexion) in primary glaucoma
gives us information about the state of excitatory and inhibitory subcortical cen-
tres during disturbed action of the central nervous system. The finding of a po-
sitive Vanýsek's triad gives the opportunity of managing the eye tension better by
using sedatives than only by means of miotics.   Klenová - Hradec Králové

VANYSEX, J.

Our clinical experience with electroretinography. Rev.
Czech. M. 2 no.3:205-215 1956.

1. From The Opthalmology Dept., Masaryk University, Brno.
Director: Prof. J. Vanysek.
    (RETINA, physiol.
        dynamics, determ. by electroretinography)

VANYSEK, Jan

Electroretinographic studies of the effect of the central nervous system on adaptation of the human retina. Cesk. of th. 12 no.4: 233-238 Aug 56.

1. Z ocni kliniky MU v Brne. Prednosta: prof. Dr. J. Vanysek.
   (RETINA, physiology,
       electroretinography of dark adaptation, role of CNS
       (Cz))
   (ADAPTATION, OCULAR,
       dark, electroretinography & role of CNS (Cz))
   (CENTRAL NERVOUS SYSTEM, physiology,
       regulation of dark adaptation, electroretinography (Cz))

VANÝSEK, Jan, Prof. Dr.

Human electroretinography; review of current literature. Cas. lek.
cesk. 97 no.10:Lek. veda zahr.,1-18 7 Mar 58.
          (ELECTRORETINYGRAPHY
              review (Cz))

VANYSEK, Jan; KOZOUSEK, Vladimir

Some eye lesions in brain concussion. Cesk. ofth. 17 no.4/5:281-287
Jl '61.

1. Ocni klinika University J. Ev. Purkyne v Brne, predn. prof. MUDr.
Jan Vanysek.

(BRAIN wds & inj)   (EYE pathol)

VANYSEK, Jan; KOZOUSEK, Vladimir

Some tapetoretinal degenerations in the electroretinographic picture.
Cesk. ofth. 17 no.7:481-486 N '61.

1. Ocni klinika University J. Ev. Purkyne, prednosta prof. dr. Jan Vanysek.

(ELECTRORETINOGRAPHY)   (RETINA pathol)

VANYSEK, J.; PREISOVA, J.

Diagnostic evaluation of ultrasound in ophthalmology. Rev.
czech. med. 10 no.2:73-85 passim.   '64

1. Ophthalmological Clinic, Medical Faculty, J.E.Purkyne
University, Brno; Director: Prof. J.Vanysek, M.D., D.Sc,

VANYSEK,J.; MOSTER, M.

Relation of mucoproteins, electrolytes and coenzyme A in the
serum of patients with glaucoma. Cesk. oftal. 20 no.4:280-288
Jl'64.

1. Ocni klinika lekarske fakulty UJEvP [University J.E.Purkyne)
v Brne; prednosta: prof. dr. J.Vanysek, DrSc.

VANYSEK,J.; PREISOVA,J.

On the possibilities of untrasonic diagnosis in ophthalmology.
Cas.lek. cesk. 103 no.8:193-198   21 F'64

1. Ocni klinika lekarske fakulty UJEvP v Brne; prednosta: prof.
dr. J.Vanysek, DrSc.

VANYSEK, J., prof. dr.,DrSc.; KVAPILIKOVA, K.

Early and late experiences with intracameral lenses. Cesk. oftal.
21 no.3:159-166 My '65

1. Ocni klinika lekarske fakulty University J.E. Purkyne v Brne
(prednosta: prof. dr. J. Vanysek, DrSc).

PREISOVA, J.; VANYSEK, J.

Our experiences with ultrasound diagnosis of eye diseases.
Cesk. oftal. 21 no.5:361-369 S '65.

1. Ocni klinika lekarske fakulty University J.E. Purkyne
v Brne (prednosta prof. dr. J. Vanysek, DrSc.)

VANYSEK, R.

Some reminiscences of the author's association with Prof. Stud-
nicka. Lek.listy 5 no.22:670-671 15 Nov 50.   (CLML 20:5)

VANISEK, V.

"Eclipses of Stars by the Moon." p. 138. (MATEMATICKO-PRIRODOVEDECKE ROZHLEDY, Vol. 32, no. 5, 1953, Praha, Czechoslovakia)

So: Monthly List of East European Accessions, LC, Vol. 3, No. 5, May 1954/Unclassified

VANYSEK, V.

"Polar telescope." (p.153). RISE HVEZD. (Ceskoslovenska spolecnost astronomicka) Praha. Vol. 34, No. 7, Sept. 1953.

SO: East European Accessions List, Vol. 3, No. 8, Aug 1954.

VANYSEK, V.

Vanysek, V.   Notes from a trip to Poland. p.65.

Vol. 4, No. 5, Oct. 1954   CASOPIS CESKOSLOVENSKYCH USTAVU ASTRONOMICKYCH
Praha, Czechoslovakia

SO: Monthly List of East European Accessions, (EAL), LC, Vol. 5, No. 2
      February, 1956

VANYSEK, V.; HREBIK, F.

"The Dependence of the Photometric Constant II of Comets on the Helio-
centric Distance. In English." p. 65 (BIULLETEN ASTRONOMICIESKIKH
INSTITUTOV CHEKHOSLOVAKII. BULLETIN OF THE ASTRONOMICAL INSTITUTES OF
CZECHOSLOVAKIA. Vol. 5, No. 4, July. 1954; Praha, Czech.)

So: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 4,
April 1955, Uncl..

VANYSEK, Dr. V.

POJER, J., prof. Dr; BRAZDA, J., Dr; VANYSEK, V., RNDr

Incidence of myocardial infarction. Lek. listy, Brno 9 no.21:
481-484 1 Nov 54.

1. Z III. vnitrni kliniky M.U. a astronomickeho ustavu M.U.
Prednosta prof. Dr J. Mohr.
        (MYOCARDIAL INFARCT, epidemiology,
          in Czech., seasonal factors)
        (CLIMATE,
          seasonal variations in incidence of myocardial infarct
          in Czech.)

VANYSEK, V.

USSR/ Astronomy

Card 1/1   Pub. 8 - 12/13

Authors   : Ruprekht, Ya., and Vanysek, V.

Title   : Regarding the question on disintegration of masses considered by V. V.
              Radzievskiy in his unlimited problem of three bodies with the Newton-Hook
              interaction

Periodical : Astron. zhur. 31/1, 93-94, Jan-Feb 1955

Abstract   : The deduction from the solution of the three body problem made by
              Radzievskiy, i.e. the possibility of the disintegration of masses near
              the sun, are criticized. Three references: 1 USA and 2 USSR (1954-1954).

Institution : Czechoslovakian Acad. of Scs., Astronomical Institute

Submitted   : .....

RUPREKHT, Ya.; VANYSEK, V.

Problem of the dispersion of scattered clusters as applied by
V.V.Radzievskii to a general solution of an unlimited problem
of three bodies with a Newton-Hook interaction. Astron.zhur.
32 no.1:93-94 Ja-F '55.   (MIRA 8:2)

1. Astronomiuneskiy institut Chekhoslovatskoy Akademii nauk.
      (Stars--Clusters)(Problem of three bodies)

VANYSEK, V.

Dispersion of velocities of bright stars and interstellar gas.
Izv.Krym.astrofiz.obser. 16:189-191 '56.   (MIRA 13:4)

1. Astronomicheskiy institut Chekhoslovatskoy akademii nauk,
Praga.
             (Stars) (Gases, Interstellar)

VANYSEK, V.

Physical properties of interstellar matter. p. 81.
(Pokroky Matematiky, Fysiky A Astronomie, Vol. 2, no. 1, 1957. Praha,
Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 10, October 1957. Uncl.

VANYSEK, V. ; RAJCHL, J.

The probable explosion of the comet,

P. 57, (Casopis Ceskslovenskych Ustava Astronomickych) Vol. 7, no. 5, June 1957
Praha, Czechoslovakia

SO: Monthly Index of East European Acessions (EEAI) Vol. 6, No. 11 November 1957

VANYSEK, V.

Arend-Roland 1956 h Comet.

p. 68 (Casopis Ceskoslovenskych Ustavu Astronomickych. Vol. 7, No. 5, 1957, Praha,
Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 2,
February 1958

VANYSEK, V.

The determination of the quality of dust in cometary atmosphere. In English.
p. 195.

PUBLICATIONS. (Cekoslovenska akademie ved. Astronomicky ustav.) Praha,
Czechoslovakia, No. 34/42, 1958.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, no. 11, Nov. 1959
uncl.

VANYSEK, V.; HRUSKA, A.

Physical properties of comets based on photometric data.   In English.   p. 345.

VANYSEK, V.; GRYGAR, J.; SEKANINA, Z.

Initial velocity in the tail of comet 1956h. In English. p. 115.

BULLETIN OF THE ASTRONOMICAL INSTITUTES OF CZECHOSLOVAKIA. (Ceskoslovenska akademie ved. Astronomicky ustav) Praha, Czechoslovakia, Vol. 10, no. 4, July 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, no. 11, Nov. 1959
Uncl.

PHASE I BOOK EXPLOITATION   CZECH/5216

Budil, Ivo, ed.

Do blízkého i vzdáleného vesmíru (Into the Near and Distant Universe)
Prague, Orbis, 1960. 10,000 copies printed.

Authors: Milan Blaha, Doctor of Natural Sciences, Candidate of
Physics and Mathematics. Ondřej Brychta, Engineer. Jan Bukovský,
Professor, D.C.Sc., Václav Bumba, Doctor of Natural Sciences, Can-
didate of Physics and Mathematics. Zdeněk Ceplecha, Candidate of
Physics and Mathematics. Josef Dvořák, Doctor of Medicine.
Vladimír Guth, Docent, Doctor of Natural Sciences, Corresponding
Member of the Slovak Academy of Sciences, Doctor of Physics and
Mathematics. Josip Kleczek, Doctor of Natural Sciences, Candidate
of Physics and Mathematics. Miloslav Kopecký, Doctor of Natural
Sciences, Candidate of Physics and Mathematics. Luboš Perek,
Doctor of Natural Sciences, Candidate of Physics and Mathematics.
Miroslav Plavec, Doctor of Natural Sciences, Candidate of Physics
and Mathematics. Jaroslav Ruprecht, Candidate of Physics and
Mathematics. Ladislav Sehnal, Candidate of Physics and
Mathematics. Josef Sadil.

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and Mathematics. Zdeněk Švestka, Doctor of Natural Sciences,
Candidate of Physics and Mathematics. Boris Valníček, Doctor
of Natural Sciences and Vladimír Vanýsek, Doctor of Natural
Sciences, Candidate of Physics and Mathematics. Resp. Ed.:
Josef Sadil.

PURPOSE: This book is intended for the general reader interested
in astronomy, celestial mechanics, and astrophysics.

COVERAGE: The book presents in popular language and in summary
form the most important achievements of science to date in the
field of astronomy, celestial mechanics, and astrophysics, and
noted the importance of continued progress in these disciplines
for space travel to the moon and in our solar system, and ulti-
mately to the nearest stars and galaxies. In the section headed
"About the Authors" the degrees and titles, affiliations and
scientific contributions of each author are given. The text
is accompanied by many diagrams, graphs, and tabular data. There
are 37 photographs of various celestial bodies. No personalities

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are mentioned. There are 29 references, all Czech (several
translations).

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                    THE NEAR UNIVERSE

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    Orbit of the moon around the earth   8
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Card 3/4

VANYSEK, V.; TREMKO, J.

Photoelectric measurements of intensity distribution in comet 1961e, Wolf, and 1963c. Bul Astr Cz 16 no.6:238-243 '65.

1. Faculty of Mathematics and Physics of the Charles University, Prague (for Vanysek). 2. Astronomical Institute of the Slovak Academy of Sciences, Skalnate Pleso (for Tremko).

L 41519-65   ARG/EEO-2/EWG(j)/EWT(d)/FBD/FSS-2/EWG(r)/EWT(l)/FBO/EWP(e)/P-4(e)/
EWT(m)/FS(v)-3/EPF(c)/FEC(k)-2/EWG(o)-2/EWP(i)/EWP(f)/EWG(v)/EWP(c)/EWP(v)/EWA(1)/
EPR/EWP(j)/T-2/EWG(a)-2/EWP(h)/EPA(bb)-2/EEC(c)-2/EED-2/EWG(c)/FCS(k)/EWP(b)/
AM4045110   Pl-4/Pw-4/Pz-4/Pn-4/ BOOK EXPLOITATION   Pl-4/Ph-4/Pac-2/Ps-4/Pr-4/ /63
Po-4/Po-5/Pq-4/Pac-4/Pr-4   IJP(c) AST/TT/EU/DD/RM/GU/BC/EM   141

Harvir, Miroslav, (Engineer); Denes, Konrad, (Professor, Doctor); Bouska, Jiri,.../.
(Doctor); Budil, Ivo, (Graduate in Philosophy); Cehlecha, Zdenek, (Candidate of
Physical and Mathematical Sciences); Codr, Milan, (Doctor); Dolezal, Vladimir,EU/.ill
(Doctor); Dvorak, Antonin, (Candidate of Medical Sciences); Dvorak, Josef, (Doctor);
Guth, Vladimir, (Candidate of Medical Sciences, Docent, Doctor); Horak, Zdenek,
(Doctor of Physical and Mathematical Sciences, Corresponding Member of the
Czechoslovak Academy of Sciences, Professor, Doctor); Hospodar, Jan, (Doctor of
Physical and Mathematical Sciences, Doctor); Klecek, Josip, (Doctor); Klest,
Emil, (Candidate of Physical and Mathematical Sciences); Kolodovsky, Milan; Koml,
Vladimir (Doctor); Kopecky, Miloslav, (Candidate of Legal Sciences); Krivsky,
Ladislav, (Candidate of Physical and Mathematical Sciences); Kviz, Zdenek, (Can-
didate of Physical and Mathematical Sciences); Ledvina, Milan, (Engineer); Malcik,
Vladimir, (Doctor); Moravek, Milan, (Candidate of Medical Sciences); Mrazek,
Jaroslav, (Candidate of Medical Sciences, Engineer); Mrazek, Jiri, (Candidate of
Technical Sciences); Neuzil, Ludek, (Doctor); Novotny, Zdenek, (Candidate of
Physical and Mathematical Sciences); Novotny, Zdenek, (Doctor);Pernegr, Jaroslav,
(Doctor; Candidate of Physical and Mathematical Sciences; Pesek, Rudolf, Professor,
Doctor, Engineer); Pipal, Miloslav, (Doctor of Technical Sciences, Corresponding
member, of the Czechoslovak Academy of Sciences); Plavec, Miroslav, (Doctor);
Pokorny, Zdenek, (Candidate of Physical and Mathematical Sciences, Docent, Doctor);

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    2

L 41519-65

AM4045110

14

Ruml, Vladimir, (Candidate of Medical Sciences, Doctor); Sadil, Josef, (Doctor of Physiological Sciences); Schnal, Ladislav; Stvernk, Jiri, (Doctor); Svcstka, Zdenck, (Doctor); Tuma, Jaroslav, (Candidate of Physical and Mathematical Sciences, Doctor); Tynl, Vaclav, (Docent, Engineer); Uchla, Ivan, (Candidate of Technical Sciences, Professor, Doctor); Valnicek, Boris, (Candidate of Physical and Mathematical Sciences, Doctor); Vanycek, Vladimir, (Candidate of Physical and Mathematical Sciences, Docent, Doctor); Vlasak, Marian, (Candidate of Physical and Mathematical Sciences; Doctor); Voda, Miloslav, (Engineer)

Principles of astronautics (Zaklady kosmonautiky) Prague, Orbis, 1964. 445 p. illus., biblio. 5000 copies printed.

TOPIC TAGS: cosmonautics, rocket, satellite, space flight, missile

PURPOSE AND COVERAGE: This publication is a popular scientific reference book for people working in cosmonautics. The book presents a survey of cosmonautics and space flight up to 1 June 1963.

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16(1). 16. 500

68970

AUTHORS: Kreynes, M.A., Vanyshteyn, I.A., and Ayzenshtat, N.D.

S/020/60/131/02/008/071

TITLE: An Instance of a Lattice Which Cannot be Approximated by Rectifiable Lattices

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 2, pp 249-252 (USSR)

ABSTRACT: Let G be a plane set homeomorphic to the closed square. Three families of curves A, B, C in G are denoted as a lattice S = A, B, C in G if they satisfy the following conditions: 1) through every point of G there goes one curve of the families A, B, C each; 2) two curves of two families intersect at most in one point; 3) for every pair of these families there exists a topological mapping of G for which all curves of the pair go over into straight lines. S is called rectifiable if there exists a topological mapping of G for which all curves of A, B, C go over into straight lines. Let $z = f(x,y)$ be defined in R: $x \leq x \leq \bar{x}$, $\underline{y} \leq y \leq \bar{y}$. The families of curves $x = $ const, $y = $ const, $z = $ const form the lattice corresponding to the function $z = f(x,y)$.

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An Instance of a Lattice Which Cannot be
Approximated by Rectifiable Lattices

68970

S/020/60/131/02/008/071

Let $p(t) = \begin{cases} -^1/12(t-1)^7+^7/12(t-1)+^1/2 & \text{for } 0 \leqslant t \leqslant 2 \\ 1 & \text{for } t > 2 \end{cases}$, and $p(t)=p(-2t)$ for $t < 0$.

Theorem 2: The lattice which corresponds to the function
$z = f(x,y) \equiv x+y-1,1p(x)p(y)p(x+y)-$

$$-0,0001xy(x-2)(x-3)(y+1)(y-\tfrac{3}{2})$$

in the square R: $|x| \leqslant 3,5$, $|y| \leqslant 3,5$ cannot be approximated by
rectifiable lattices.

There are 3 references, 2 of which are Soviet, and 1 German.

PRESENTED: November 17, 1959, by A.N.Kolmogorov, Academician
SUBMITTED: November 17, 1959

Card 2/2

VANYTRAUB, I.A.

Studying soybean seed globulins by paper electrophoresis. Trudy po khim. prirod. soed. no.3:193-198 '60.   (MIRA 16:2)

1. Kishinevskiy gosudarstvennyy universitet. Laboratoriya khimii belka.
   (Paper electrophoresis)   (Soybean)   (Globulin)

VANYUKHINA, E.P., inzh.

Using electronic computers for accounting wages. Mashinostroenie no.4:11 14 Jl-Ag '65.

(MIRA 18:8)

VANYUKOV, A.P., aspirant; GONOKHOV, A.G.

Voltage stabilizer. Elek.i tepl. tiaga 5 no.12:16-17 D '61.
                                              (MIRA 15:1)
1. Kafedra "Elektrosnabzheniye zheleznykh dorog" Leningradskogo
instituta inzhenerov zheleznodorozhnogo transporta (for Vanyukov).
2. Zamestitel' nachal'nika uchastka energosnabzheniya, stantsiya
Bogotol Vostochno-Sibirskoy dorogi (for Gonokhov).
                    (Voltage regulators)

VANYUKOV, A.P., inzh.

A three-phase 100.kv.-a. power stabilizing system for supplying electric power consumers from a contact network carrying single-phase current. [Trudy] LIIZHT no.193:154-177 '62.   (MIRA 15:12)

1. Leningradskiy institut inzhenerov zheleznodorozhnogo transporta.
            (Electric power distribution)
            (Electric railroads—Current supply)

VANYUKOV, A. V.   Cand. Tech. Sci.

Dissertation: "Study of Gold Distribution Between Dross and Work lead." Moscow Inst of Nonferrous Metals and Gold imeni M. I. Kalinin, 15 May 47.

SC: Vechernyaya Moskva, May, 1947 (Project #17136)

VANYUKOV A.V.

VANYUKOV, V.A., professor, doktor; VANYUKOV, A.V., dotsent; KUDRIN, A.N.,
        inzhener.

        Sulfidizing oxidized nickel ores during smelting in shaft furnaces.
        TSvet.met.27 no.3:17-20 My-Je '54.   (MIRA 10:10)
                            (Nickel--Metallurgy)

VANYUKOV, V.A.; prof., doktor; VANYUKOV, A.V., dots.; KUDRIN, A.N., inzh.

Lowering fuel consumption in shaft furnaces. TSvet.met. 28
no.2:23-26 Mr-Ap '55.   (MIRA 10:10)
                    (Blast furnaces) (Combustion)

VANYUKOV, A.V.

VANYUKOV, V.A.; VANYUKOV, A.V.

Reducing the loss of nickel in waste slag. TSvet.met. 28 no.4:9-16
Jl-Ag '55.   (MIRA 10:11)
                    (Nickel)   (Slag)

VANYUKOV, A.V

VANYUKOV, V.A.; VANYUKOV, A.V.; YUDINA, I.N.

Investigation of the reaction of natural nickel silicate with iron sulfides. TSvet.met. 28 no.4:17-22 Jl-Ag '55. (MIRA 10:11)

(Iron sulfides)   (Nickel silicates)

VANYUKOV, A.V.

VANYUKOV, V.A.; VANYUKOV, A.V.; TARASHCHUK, N.T.

Studying the equilibrium diagram of the system: iron-nickel-sulfur.
(MIRA 10:11)
TSvet.met. 28 no.4:23-27 Jl-Ag '55.
(Systems (Chemistry))

VANYUKOV, A.V.

VANYUKOV, A.V.; KUDRIN, A.N.; CHERNYSHOV, D.P.

Problems in blast-furnace smelting. TSvet.met. 28 no.4:27-34
Jl-Ag '55. (MIRA 10:11)

(Blast furnaces) (Smelting)

VANYUKOV, A.V.

BEREGOVSKIY, Vladimir Iosifovich; GUDIMA, Nikolay Vasil'yevich; VANYUKOV,
V.A., professor doktor, zasluzhennyy deyatel' nauki i tekhniki,
retsenzent; VANYUKOV, A.V., dotsent, kandidat tekhnicheskikh nauk,
retsenzent; IL'ICHEV, G.V., inzhener, retsenzent; ZADIKYAN, A.A.,
inzhener, retsenzent; RESHETNIKOV, F.G., redaktor; ARKHANGEL'SKAYA,
M.S., redaktor izdatel'stva; ATTOPOVICH, M.K., tekhnicheskiy
redaktor

[Nickel metallurgy; a textbook for schools and courses for specialists]
Metallurgiia nikelia; uchebnoe posobie dlia shkol i kursov masterov.
Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi
metallurgii, 1956. 355 p.   (MLRA 9:10)
           (Nickel--Metallurgy)

No. 20, ... —Oxidized Ni ores ... be solidified by a gaseous or a solid ... sulfidizer (pyrite) is recom...

VANYUKOV. A.V.

LAKERNIK, Mark Moiseyevich; SEVRYUKOV, Nikolay Nikolayevich; BELYAYEV, A.I.,
prof., dokt.; retsenzent; VELLER, R.L., kand.tekhn.nauk; retsenzent;
VANYUKOV, A.V., retsenzent; KROL', L.Ya., retsenzent; SAMSONOV,G.V.,
retsenzent; LEONIDOV, N.K., inzh., retsenzent; ZHEMCHUZHINA, Ye.A.,
red.; EL'KINA, L.M., red.izdatel'stva; MIKHAYLOVA, V.V., tekhn.red.

[Metallurgy of nonferrous metals] Metallurgiia tsvetnykh metallov.
Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi
metallurgii, 1957. 535 p.   (MIRA 11:1)
                    (Nonferrous metals--Metallurgy)

137-58-6-11334

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 11 (USSR)

AUTHOR: Vanyukov, A.V.

TITLE: Preparation for Concentration and Flotation of Oxidized Nickel Ores (Podgotovka k obogashcheniyu i flotatsii okislennykh nik-elevykh rud)

PERIODICAL: Materialy Soveshchaniya po vopr. intensifik. i usoversh. dobychi i tekhnol. pererabotki medno-nikelevykh i nikelevykh rud. 1956 g. Moscow, Profizdat, 1957, pp 252-260

ABSTRACT: A method of presulfidation (P), whereby Ni is converted to a suifide phase, is suggested. The resultant sulfides are sep-arated by flotation. Specimens of silicate containing 26-30% Ni were employed in the investigation. Pyrite was used as the sul-fidizing agent. The experiments showed the P process to be fairly vigorous. At 800-900°C, the conversion of Ni to the sul-fide form in 5 m..n is $\geq 95\%$. When pyrite is used, the process proceeds successfully only at higher temperature. Experi-ments were set up to study the degree to which S vapors were employed in the P process. It is found that the utilization of S depends upon temperature and the nature of the medium. In the

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137-58-6-11334

Preparation for Concentration and Flotation of Oxidized Nickel Ores

presence of a small amount (3%) of reductant, the degree of utilization of the S vapors rises: 33% at 700° and 55% at 900°. On P by pyrite, Ni sulfides form to a considerable degree owing to elementary S. The P of pre-reduced ore makes it possible to attain a high degree of conversion of oxygen compounds of Ni to sulfides. It is equally important that particles of adequate size be obtained. When the material is heated to 1150-1200° and held at that temperature for 2 hours, it is possible to derive the bulk of the sulfides in the form of inclusions measuring 0.3-0.5 mm. The sulfides may be obtained in the desired form by changing the conditions of cooling. A table of results of flotation of sulfided Ni ores is appended.

A.Sh.

1. Nickel ores--Preparation   2. Nickel ores--Flotation

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137-58-4-6575

AUTHORS: Vanyukov, A.V., Utkin, N.I.

TITLE: The Surface Tension of Slag Melts (O poverkhnostnom natya-
             zhenii shlakovykh rasplavov)

ABSTRACT: The surface tension σ of synthetic melts of FeO-SiO_2 -CaO(I) at
             1200/1400°C and of multi-component slags [SiO_2, FeO, CaO,
             MgO, Al_2O_3 (9.5%)] (II) at 1350° was determined by the meth-
             od of maximum bubble pressure. Iron crucibles and capillar-
             ies were used, and nitrogen was the working gas employed. In
             I, with a constant FeO:CaO ratio, σ diminishes as (SiO_2) rises
             from 460 (27% SiO_2) to 380 ergs/cm^2 (58% SiO_2). As the FeO:
             CaO ratio rises from 0.5 to 3.2 at constant (SiO_2), σ diminishes
             within the 460-410 interval (at 33% SiO_2) and 400-385 ergs/cm^2
             (at 58% SiO_2). The $d\sigma/dT$ of slags differing in SiO_2 contents is
             positive at a FeO:CaO ratio of 1.5. At constant (SiO_2), a rise
             in (FeO) causes the $d\sigma/dT$ to move out of the negative and into
Card 1/2   the positive values. In II, a rise in (SiO_2) from 36 to 44% or of

137-58-4-6575

The Surface Tension of Slag Melts

Al_2O_3 from 7.5 to 10.5% causes σ to decline, while as (CaO) rises from 18 to 24%, (FeO) from 16 to 22%, or MgO from 8 to 14%, σ will increase at a rate rising from CaO to MgO. The results are explained, in their qualitative aspect, by a change in interionic reaction. In particular, the rise in σ with increase in the basic acid contents and temperature is due to subdivision of the complex silicon oxide anions resulting in a strengthening of their bonds with the cations.

S. P.

1. Ores--Melting--Surface tension

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137-58-4-6576

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 37 (USSR)

AUTHORS: Vanyukov, V.A., Vanyukov, A.V., Utkin, N.I.

TITLE: Surface Phenomena, and the Losses of Metal in Slags (Poverkhnostnyye yavleniya i poteri metalla so shlakami)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota i VNiTO tsvetn. metallurgii, 1957, Nr 26, pp 54-62

ABSTRACT: Interphase tension (σ) at the slag-matte interface and the wetting (angle of contact ϑ) of slag by matte were measured. The dimensions of rapidly cooling drops of matte in the slag (17.95% FeO, 20.35% CaO, 39.7% SiO$_2$, 9.25% Al$_2$O$_3$, 10.25% MgO) were determined, and a graphic method (RzhMet, 1956, Nr 2, abstract 1006) was used to calculate σ thereon. As the S contents of the matte rose from 8.8 (16.4% Ni) to 31.7% (23.0% Ni), σ dropped from 240 to 99 dynes/cm, and the Ni content of the slag increased from 0.04 to 0.3%. As temperature rose from 1200 to 1350°C, σ rose from 193 to 234 dynes/cm, and the Ni content of the slag dropped simultaneously from 0.63 to 0.17%. The rise in σ with temperature is explained by the subdivision of the silicon oxide complexes. Holding of melts in

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137-58-4-6576

Surface Phenomena, and the Losses of Metal in Slags

an oxidizing atmosphere (5% O_2) was accompanied by a reduction in σ, while when held in a reducing atmosphere, σ increased. In a neutral atmosphere, the introduction of magnetite induced a decline in σ. Wetting of the slag by the matte is impaired as the SiO_2 and CaO contents of the latter rise, and also as FeO diminishes. η is 27-37% and drops by about 10° as the following various changes occur in the slag: SiO_2 from 38 to 44%, CaO from 20.5 to 24%, FeO from 22 to 16%. An increase in MgO contents from 10 to 12% caused η to rise from 31 to 50°. It is noted that σ and η rise with the concentration in the slag of cations that do not go into the matte (Ca^{2+}, Mg^{2+}). Simultaneously, a reduction in loss of metal with the slags was observed.

S.P.

1. Slags--Surface tension--Measurement   2. Slags--Test methods   3. Slags --Test results   4. Metals--Losses

Card 2/2

$VANYUKOV, A.V.$

137-58-5-9348

AUTHORS: Vanyukov, V.A., Utkin, N.I., Vanyukov, A.V.

TITLE: A Study of the Kinetics of Distillation of Zinc From Molten Slags
(K voprosu izucheniya kinetiki otgonki tsinka iz shlakovykh
rasplavov)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota i VNITO
tsvetn. metallurgii, 1957, Nr 26, pp 63-73

ABSTRACT: A study of the kinetics of a process in which, under the action
of solid C, Zn is distilled from molten slags of various composi-
tion. Ten samples of slags containing different amounts of SiO_2,
FeO, and CaO, and having a constant ZnO content (10%) were in-
vestigated. Chemically pure substances were employed in pre-
paring the slags. The rate of distillation of Zn from liquid slags
is determined to a considerable degree by the temperature of
the process and the composition of slag; it increases as the
temperature and the content of FeO in the slag become greater.
Acidic and ferrous slags react differently to the addition of CaO.
An increase in the CaO content increases the rate of volatiliza-
tion of Zn from ferrous slags and decreases it in the case of

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137-58-5-9348

A Study of the Kinetics of Distillation of Zinc From Molten Slags

acidic slags. The process of reduction of Zn from liquid slags falls into the category of diffusion processes; this is corroborated by the values of the rate constants, the magnitude of the apparent energy of activation, and the value of the temperature-rate coefficient. The results of the experimental smeltings justify the assumption that the distillation of Zn proceeds with the aid of metallic Fe, which is an active intermediate product of the reaction. This assumption is substantiated by the appearance of Fe beads in selected samples and in the final slag, by an increase in the rate of Zn distillation when the FeO concentration in the liquid slags is increased, and by the magnitude of the apparent energy of activation.

1. Slags--Preparation   2. Slags--Properties   3. Zinc--Separation   4. Zinc
ores--Processing   N. P.

Card 2/2

$VANYUKOV, A.V.$

137-58-3-5838

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 195 (USSR)

AUTHORS: Vanyukov, V. A. , Vanyukov, A. V. , Tarashchuk, N. T.

TITLE: Phase Diagram Studies of the Fe-Ni-S System (K voprosu
          izucheniya diagrammy sostoyaniya zhelezo-nikel'-sera)

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota i VNITO
          tsvetn. metallurgii, 1957, Nr 26, pp 108-119

ABSTRACT: The phase diagram of the Fe-Ni-S system was investigated
          up to the pseudo-binary segment FeS-NiS (35 per ent S) by means
          of thermal analysis, metallographic and mineralogical methods,
          and by microhardness studies of the individual phases. It is
          assumed that a compound $4NiS \cdot FeS$ (with an open maximum)
          exists, which forms an unstable, ternary, solid solution at low
          temperatures. At temperatures below $625^{\circ}C$, the $4NiS \cdot FeS$ (con-
          tained in the ternary solid solution) reacts with the FeS and forms
          a pentlandite solid solution (PSS). The PSS and a solid solution of
          metals may form in industrial mattes at slow cooling rates. In
          the process of cooling intermediate metal sulfide products obtained
          by bessemerization of mattes, Ni_6S_5 and the eutectic Ni_6S_5+PSS,
          are formed. Significant amounts of an independent Ni_6S_5 phase
          form only in alloys with increased S content.
                                                          R.M.
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VANYUKOV, A.V.; UTKIN, N.I.

Effect of cations on surface tension of silicate melts. Izv. vys.
ucheb. zav.; tsvet. met. no.2:39-44 '58.   (MIRA 11:8)

1. Moskovskiy institut tsvetnykh metallov i zolota. Kafedra metal-
lurgii tyazhelykh tsvetnykh metallov.
              (Base exchanging compounds)   (Surface tension)

LISOVSKIY, D.I.; VANYUKOV, A.V.; MAEVSKIY, A.Yu.; SHAPIRO, Yu.L.

Investigating shaft furnace smelting of oxidezed nickel orcs by freezing the furnace. Izv. vys. ucheb. zav.; tsvet. met. no.2:
55-70 '58.   (MIRA 11:8)

1. Moskovskiy institut tsvetnykh metallov i zolota. Kafedra metallurgii tyazhelykh tsvetnykh metallov.
                            (Nickel—Metallurgy)

AUTHORS: Vanyukov, A. V., Utkin, N. I.   SOV/163-59-3-4/49

TITLE: Surface Tension of the Melts in the Systems $FeO-SiO_2-CaO$
             (Poverkhnostnoye natyazheniye rasplavov sistemy $FeO-SiO_2-CaO$)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958,
             Nr 3, pp 22 - 24 (USSR)

ABSTRACT: The surface tension of the melts in the system $FeO-SiO_2-CaO$
             was determined. The experiments were carried out with
             synthetically produced melts in hermetically sealed
             furnaces at 1350° in gas atmosphere. From the diagram
             of the surface tension of the melt may be seen that
             an increase of the SiO_2-content in acid melts effects
             a decrease of the surface tension, but that a substitution
             of FeO by CaO causes the surface tension to increase.
             The decrease of the surface tension by increasing the
             acidity of the melt is explained by the increase of the
             capillary activity of the complexes in the melts. The
             complex anions accumulate at the surface of the melt and
             reduce the surface tension. The substitution of the

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Surface Tension of the Melts in the Systems $\qquad$ SOV/163-58-3-4/49
FeO-SiO$_2$-CaO

cations Fe^{2+} by Ca^{2+} leads to a destruction of the silicon-oxygen complexes, to a decrease of the capillary activity, and consequently to an increase of the surface tension in the silicate melts. There are 1 figure, 1 table, and 7 references, 6 of which are Soviet.

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota (Moscow Institute of Non-Ferrous Metals and Gold)

SUBMITTED: January 16, 1958

Card 2/2

VANYUKOV, V.A. [deceased]; VANYUKOV, A.V.; TOROPOVA, T.G.

      Decomposition of zinc ferrate by sulfur dioxide and sulfur trioxide.
Izv.vys. ucheb. zav.; tsvet. met. no.3:66-67 ' 58. (MIRA 11:11)

      1. Moskovskiy institut tsvetnykh metallov i zolota. Severokavkasskiy
gornometallurgicheskiy institut.
               (Zinc ferrates) (Sulfur oxides)

SOV/149-58-5-4/18

AUTHORS: Vanyukov, A.V. and Odinets, Z.K.

TITLE: On the Form of Metal Losses in Slags (O forme poter' metallov so shlakami)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, 1958, Nr 5, pp 27 - 37 (USSR)

ABSTRACT: Waste slags constitute the main source of losses of metals during their extraction by pyrometallurgical methods. According to a rough estimate, lowering of the nickel content in the waste slags produced by the Yuzhural'- nikel Combine by only 0.01% would result in an annual saving of 3.5 million roubles. There are indications that metals can be present in slags in the form of dissolved sulphides, mechanically entrapped matte inclusions and various silicates and oxides, but data on the quantitative relationship between these various forms of metal losses are lacking. Solubility of FeS, CaS and MgS in slags is said to be high, that of ZnS limited, while data on the solubility of NiS, Cu_2S and CoS are contradictory. The object of the present investigation was to determine

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On the Form of Metal Losses in Slags

the effect of various factors on the relative concentration
of nickel, copper and cobalt in the matte and in the slag.
The composition of the experimental slags is given in
Table 1. They were synthetised by melting under nitrogen,
in iron crucibles, calculated quantities of fayalite, pure
SiO_2 powder and reactive CaO calcined at 900 °C, the final
product being ground to 60 mesh, Fayalite was prepared
in the same manner from ferric oxalate and pure SiO_2
powder and according to the results of microscopic examinat-
ion no magnetite was present in the final product. The
experimental mattes were prepared from pure sulphides
melted in alumina crucibles under purified argon. The iron
and nickel sulphides were obtained by passing H_2S over
"Armco" iron shavings and nickel powder at
700 and 900 °C, respectively. The copper and cobalt
sulphides were prepared by direct fusion of the components
in graphite crucibles. The chemical analysis of the
sulphides is given in Table 2.
Radioactive tracer technique was used for determination
of the form in which the investigated metals were present

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On the Form of Metal Losses in Slags

in the slag that had been melted in contact with a matte of a given composition. On the assumption (later verified experimentally) that gold is not soluble in slag, a radio-active isotope Au^{198} had been introduced into all the experimental mattes. On the completion of each experiment in which matte of a given composition was melted under purified argon (partial oxygen pressure less than 0.6×10^{-11} atm) in contact with one of the experimental slags, the radioactivity of the slag was therefore proportional to the amount of the matte inclusions mechanically entrapped in the slag. On the assumption that the composition of the matte inclusions was the same as that of the original material, the quantity of metals carried by these inclusions was calculated from the known values of the radioactivity of the slag and the matte. The total metal content of the slag was determined by chemical analysis and the quantity of metals dissolved in the slag was found by difference. The experimental apparatus is illustrated diagrammatically

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On the Form of Metal Losses in Slags

in Figure 1 and the results are reproduced graphically.
To check the reliability of the radioactive tracer technique,
one series of experiments with a nickel matte was repeated
under the same conditions using the following method.
A small, cylindrical crucible provided with a small orifice
half way up its wall was placed in a larger crucible. The
nickel matte was placed in the small crucible below the level
of the orifice. Slag was placed in both crucibles, its
level in the large crucible being slightly larger than in
the small one. It was assumed that small dimensions of the
orifice in the smaller crucible would prevent the matte
inclusions finding their way to the slag contained in the
large crucible, so that the total metal content of this
slag would correspond to metals dissolved in the slag. As
can be seen from Table 5, there was a close agreement between
the results obtained by the two different methods.
The effect of replacing FeO by CaO on the distribution of
Cu, Ni and Co in the slag of constant acidity at 1 300 °C is
shown in Figure 2. Scale on the left side – dissolved Ni
(Curve 1) and Cu (Curve 2). Scale on the right side –
dissolved Cu (3), mechanical losses of Cu (4) and Co (5).

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On the Form of Metal Losses in Slags

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The effect of acidity of the slag is shown in Figure 3: left - dissolved Ni (1) and Cu (2), mechanical losses of Co (5); right - dissolved Co (3), mechanical losses of Cu (4). Figure 4 shows the effect of the sulphur content of the matte with a constant metal content on the quantity of metals dissolved in the slag: Curve 1 - Ni, Curve 2 - Cu and Curve 3 - Co. The effect of the metal content of the matte (at constant S content) on the distribution of metals in the slag is shown in Figure 5: left - dissolved Ni (1) and Cu (2) and mechanical losses of Co (5); right - dissolved Co (3) and mechanical losses of Cu (4) and Ni (6). The effect of temperature is shown in Figure 6: left - dissolved Ni (1) and Cu (2); right - dissolved Co (3) and mechanical losses of Cu (4) and Co (5). Figure 7 shows the effect of the oxygen content of the matte on the quantity of copper dissolved (Curve 1) and mechanically entrapped (Curve 2) in the slag. The effect of the temperature, matte composition and replacing FeO by CaO on the solubility of FeS in the slag is shown in Figure 8, that of the acidity of the slag, matte composition and temperature is illustrated in Figure 9.

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On the Form of Metal Losses in Slags

The results of the present investigation show that:
(i) in a neutral atmosphere, the quantities of Ni and Cu dissolved in the slag amount to little more than 0.001 and 0.01% respectively. Owing to higher solubility of CoS and the reversibility of the reaction

$$CoS + (FeO) \rightleftharpoons FeS + (CoO) ,$$
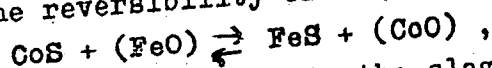
the amount of Co dissolved in the slag is considerably higher and can exceed 0.1%;
(ii) the quantity of metals dissolved in the slag depends to a large extent on the Fe_3O_4 content of the matte and on the composition of the gaseous phase. The higher the Fe_3O_4 content of the matte and the higher the proportion of O_2 present in the gaseous phase the higher is the proportion of metals dissolved in the slag. Presence of oxygen-bearing nickel compounds in industrial slags obtained during smelting of nickel oxide ores can be explained either by the fact that the sulphiding reaction does not proceed to completion, or by the entrapment of the burden fines in the slag. This means that nickel losses in the

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On the Form of Metal Losses in Slags

slags can be considerably reduced by application of
preliminary sulphiding treatment during the sintering
process and by improving the quality of the sintered
agglomerate. It is also necessary to limit to a minimum
the Fe_3O_4 content in the raw agglomerate by sintering in

a tube furnace. Lowering of the magnetite content in the
sinter cake entering the reverberatory copper smelting
furnace can be attained by introducing a reducer in the
bottom hearth of the sintering furnace. The practice
of introducing the converter slags containing a large
proportion of magnetite in the reverberatory furnace is
not to be recommended;
(iii) losses of Ni and Cu in the slags occur mainly by
way of the mechanically entrapped matte inclusions. These
losses become smaller under conditions which favour the
coalescence of the sulphide droplets and their separation
from the slag. The fact that with increasing acidity of
the slag the mechanical losses of metals decrease indicates
that in some cases the surface properties which govern the
process of coalescence are of primary importance;

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On the Form of Metal Losses in Slags

     (iv) since increasing the temperature lowers the proportion
of mechanically entrapped matte inclusions without
significantly increasing the quantity of metals dissolved
in the slag, it appears that in order to lower the total
metal content of the waste slags the melt should be
overheated.
There are 9 figures, 5 tables and 24 references, 16 of
which are Soviet, 7 English and 1 German.

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota.
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Chair of Metallurgy of Heavy Non-ferrous Metals)

SUBMITTED: July 16, 1958

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SOV/149-58-6-5/19

AUTHORS: Vanyukov, A.V. and Utkin, N.I.

TITLE: The Effect of Temperature on the Surface Tension of Silicate Melts (Vliyaniye temperatury na poverkhnostnoye natyazheniye silikatnykh rasplavov)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, 1958, Nr 6, pp 43 - 48 (USSR)

ABSTRACT: The temperature dependence of the surface tension of binary silicate melts was extensively studied by King (Ref 5) who used a modified ring method for measuring the surface tension. King established that the temperature coefficient of the surface tension of some mixtures was positive and that it increased with increasing acidity of the melts and with increasing field strength of the cations, the latter effect having been also observed by Boni and Derge (Ref 3). On the other hand, it had been found by other investigators (Refs 7,8) that the surface tension of the $FeO-SiO_2$ and $FeO-Fe_2O_3$ systems was practically unaffected by the temperature variation. The present authors studied the surface tension σ of various synthetic silicate melts in the 1 200 - 1 400 °C temperature range using the

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method of the maximum pressure of a gas (nitrogen) bubble, the experimental technique having been described elsewhere (Refs 9, 10). The effect of the temperature on σ of the melts of the $FeO-SiO_2-CaO$ system was studied on seven mixtures representing typical slags formed in a majority of processes used in extraction of non-ferrous metals. The composition of these experimental slags (in mol%) is given in Table 1, the last column of which shows the acidity of the melts as measured by $K = O(SiO_2)/O(\Sigma MeO)$.

The results of the first series of experiments are given in Table 2, showing the values of σ (in dynes/cm) at various temperatures and the temperature coefficient of σ (in dynes/cm per $^\circ C$) for the investigated temperature range. With the exception of the melt containing the maximum proportion of CaO, the temperature coefficient of σ was positive and its magnitude increased with the increasing FeO/CaO ratio and with increasing acidity of the melts. In the second stage of the investigation, the effect of temperature on σ of melts of the

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$FeO-SiO_2-Me_2O(MeO)$ systems was studied on mixtures containing (in mol.%) 34.5 FeO, 43 SiO and 22.5 Me_2O (an alkali metal oxide) or MeO (an alkaline earth metal oxide). The temperature dependence of σ of the melts containing K_2O, Na_2O and Li_2O is shown in Figure 1 (graphs 1, 2 and 3, respectively). The same relationship for the melts containing BeO, BaO, SrO, CaO and MgO is shown in Figure 2 (graphs 1-5, respectively). The relationship between the temperature coefficient of σ of silicate melts and the ionic potential $: = Z/r$ of some cations is illustrated in Figure 3. The surface tension of the melt containing K_2O decreased with increasing temperature and the temperature coefficient of σ of the melt containing Na_2O was equal zero. In all the other cases the temperature coefficient of σ was positive. The following conclusions were reached: i) the temperature dependence of σ of the investigated silicate melts containing FeO confirmed the micro-heterogeneity of melts of this type; ii) the high

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degree of micro-heterogeneity exhibited by the melts in the presence of the Fe^{2+} cation is caused by oxygen breaking away from the complex anions and by the cybotactic groups consisting of complex anions and weak cations being forced out to the surface layers of the melt; iii) in the case of the cations of the alkali and alkaline earth metals characterised by ionic potential lower than 2, the micro-heterogeneity of the melts containing the Fe^{2+} ions increases with the decreasing field strength of the cations and the temperature coefficient of σ correspondingly decreases; iv) the decrease of the temperature coefficient of σ observed when CaO is substituted by MgO or BeO is an indication of the tendency of the

Mg^{2+} and Be^{2+} cations to form complexes; v) the increase of the temperature coefficient of σ of the melts of the $FeO-SiO_2-CaO$ system resulting from the increase ratio of the acidity and of the $FeO/CaO/is$ associated with the breakdown of the silicate anions and with homogenisation of the melt; vi) the magnitude and the sign of the

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temperature coefficient of σ of silicate melts is deter-
mined by: a) a decrease of the strength of the forces
binding the ions; b) breakdown of the complex anions
resulting from weakening of the bond between the
Fe^{2+} and O^{2-} ions and c) homogenisation of the melt at
higher temperatures. The decisive part played by the two
last factors can be inferred from the positive values of the
temperature coefficient of σ of the majority of the
investigated melts. There are 3 figures, 2 tables and
14 references, 12 of which are Soviet and 2 English.

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota.
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                Chair of the Metallurgy of Heavy Non-ferrous Metals)

SUBMITTED: January 14, 1958

Card 5/5

VANYUKOV, A.V.

New processes in Russian metallurgy of oxidized nickel ores.   (MIRA 11:8)
TSvet met. 31 no. 7:30-34 Jl '58.

1. Mintsvetmetzoloto.
(Nickel--Metallurgy)

18(6)
AUTHORS: Vanyukov, A. V., Utkin, N. I.   SOV/163-59-1-3/50

TITLE: Influence of Chromium Upon the Surface Tension in Nickel-smelt
                   Slags (Vliyaniye khroma na poverkhnostnoye natyazheniye shlakov
                   nikelevoy plavki)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 1,
                   pp 11-13 (USSR)

ABSTRACT: Reference is made of the fact that by an addition of as little
                   as 0.001 gram mols of Cr_2O_3 the surface tension of glasses is
                   reduced by 200-225 dynes/cm, which phenomenon has been dis-
                   covered by Appen et al. (Ref 3). The work reported in this
                   paper was carried out to check this allegation. The influence
                   of chromium upon the surface tension (σ) in the slags of smelts
                   of oxidized nickel ores was investigated. The surface tension
                   was determined according to the method of the maximum pressure
                   of a gas bubble (nitrogen) at three temperatures, at 1,300,
                   1,350, and 1,400° (Ref 4). Synthetic slags, fused from chemi-
                   cally pure oxides, were used in the experiments. Ferrous
                   oxide was added as iron silicate ($2FeO.SiO_2$). The Cr_2O_3
                   content in the slags varies from 0 to 5 %. It appears from

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Influence of Chromium Upon the Surface Tension in   SOV/163-59-1-3/50
Nickel-smelt Slags

the experimental data that the surface tension decreases if
the chromium oxide content increases. The concentration
decrease of Cr_2O_3 lies at about 1 %. The surface tension
decreases by about 5 dynes/cm. It is shown that the decrease
of the surface tension with increasing concentration is con-
nected with the increase of the capillary activity of the
complex anions. This is also demonstrated by the positive

temperature coefficient $\frac{d\sigma}{dT}$, of the slags investigated. The

experimental information, however, does not indicate such a
pronounced decrease of σ with an increase of the Cr_2O_3 content
in the slags, which with glass has been found by Appen (Ref 3).
It was found in the course of the experiments that the in-
crease of the Cr_2O_3-content in the slags results in a decrease
of the interface tension $(\sigma_{1,2})$ at the boundary between the
slag and the iron crucible. A similar influence of the
chromium upon the variation of the surface tension σ should be
expected to occur at the boundary between the slag and the

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lining, which forms during the melting of oxidized nickel ores
in cupola furnaces. The reduction of the interface tension is
closely connected with the ability of chromium to disperse
among the liquid smelt products. A low interface tension is
an inconvenient phenomenon, as in this case the separation of
the liquid smelt products becomes more difficult and the losses
of valuable metals in the slags increase. There are 2 tables
and 8 references, 7 of which are Soviet.

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota (Moscow Insti-
              tute of Non-ferrous Metals and Gold)

SUBMITTED: May 26, 1958

Card 3/3

VANYUKOV, A.V.; CHZHOU CHZHUN-KHUA [Chou Chung-hua]

Kinetics of iron sulfide oxidation. Izv.vys.ucheb.zav.; tsvet.
met. 2 no.1:41-50 '59.   (MIRA 12:5)

1. Moskovskiy institut tsvetnykh metallov i zolota. Kafedra metallur-
gii tyazhelykh tsvetnykh metallov.
          (Iron sulfides) (Ore dressing)

VANYUKOV, A.V.; CHZHOU CHZHUN-KHUA [Chou Chung-hua]

Mechanism of iron sulfide oxidation. Izv. vys. ucheb. zav.; tsvet.
met. 2 no.2:29-34 '59.   (MIRA 12:7)

1.Moskovskiy institut tsvetnykh metallov i zolota. Kafedra metallurgii
tyazhelykh tsvetnykh metallov.
            (Iron sulfides) (Oxidation-reduction reaction)

18.5000

75384
SOV/149-2-5-10/32

AUTHORS: Vanyukov, A. V., Montil'o, I.

TITLE: Study of Calcium, Iron, Nickel, and Sulfur Diffusion
             in Liquid Slags

PERIODICAL: Izvestiya Vysshikh uchebnykh zavedeniy. Tsvetnaya met-
             allurgiya, 1959, Vol 2, Nr 5, pp 60-67 (USSR)

ABSTRACT: Diffusion determines in many cases the course of met-
             allurgical processes. The work done on diffusion in
             liquid slags mostly covers transfer of matter in a
             system $CaO-Al_2O_3-SiO_2$. Problems of mass transfer in
             nonferrous metallurgy are not adequately studied as
             yet. Therefore the authors undertook a study of the
             diffusion of calcium, sulfur, iron and nickel in molten
             slag containing 39.9% SiO_2, 21% CaO, 19.1% FeO, 9.8%
             Al_2O_3, and 10.2% MgO. To trace the transfer of matter,
Card 1/4   radioactive isotopes Ca^{45}, S^{35}, Fe^{59}, and Ni^{63} were

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Diffusion in Liquid Slags   SOV/149-2-5-16/32

used. Slags were prepared with chemically pure oxides
and fayalite, melted in an iron crucible in a stream
of purified nitrogen. Melting was done under vacuum
(less than 10^{-3} mm Hg). The degree of diffusion
was determined by dipping a corundum capillary filled
with neutral slag into a slag bath tagged with a radio-
active isotope. Upon diffusion, the capillary was sub-
jected layerwise to a radiometric test. This method
permits an accurate evaluation of the duration of the
process and shows a clear boundary of contacting
masses. It eliminates convective mixing. The data so
obtained indicate that nickel, iron, and calcium are
diffused as simplest ions. The diffusion coefficients
obtained experimentally for sulfur as well as the
activation energy of mass transmission suggest the
possibility of an electron exchange between sulfur
and oxygen ions with the help of iron, as shown by
Kozheurov, V. A. The smaller the size of a particle,
Card 2/4   the greater its transfer velocity and the lower its

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Diffusion in Liquid Slags   SOV/149-2-5-16/22

activation energy. When the content of CaO in slag rises from 18% to 21%, the diffusion coefficient of nickel (at 1400°) changes from $5.87 \cdot 10^{-6}$ to $7.79 \cdot 10^{-6}$. A small difference in the energy of diffusion activation between the two slags indicates an increase in the number of holes in the slag caused by the CaO addition. This is confirmed by a study of the viscosity. There are 7 figures; 3 tables; and 34 references, 24 Soviet, 2 Japanese, 6 U.S., 1 British, 1 German. The most recent U.S. references are: Towers, H., Paris, M., Chipman,J., J.Metals, Nr 11, S 1, 1455, 1953, and Vol 9, Nr 6, 769, 1957; Li, J. C., Machang, P., J. Phys. Vol 23, Nr 23, Nr 3, 518, 1955; Hoffman, R. E., J. Chem. Phys., Vol 20, Nr 10, 1567, 1952; Tomlinson, J. W., Phys. Chem. Metals, 1953. The British reference is: Crank, J., The Mathematics of Diffusion, Oxford, 1956.

ASSOCIATION: Krasnoyarsk Institute of Nonferrous Metals. Chair of
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Study of Calcium, Iron, Nickel, and Sulfur   75384
Diffusion in Liquid Slags   SOV/149-2-5-10/32

        nykh metallov. Kafedra metallurgii tyazhelykh met-
        allov)

SUBMITTED: April 22, 1959

Card 4/4

VANYUKOV, A.V.; MONTIL'O, I .

Chemism of sulfidizing in shaft furnace smelting of oxidized
nickel ores. Izv.vys.ucheb.zav.; tsvet.met. 2 no.6:66-75
'59.   (MIRA 13:4)

1. Krasnoyarskii institut tsvetnykh metallov. Kafedra
metallurgii tyazhelykh tsvetnykh metallov,
          (Nickel ores--Metallurgy) (Ore dressing)